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DIDACTIC UNIT DESIGNED USING CRITICAL THINKING: A WAY TO IMPROVE YOUR SKILLS

NANCY EMILCE CARVAJAL MEDINA - FABIAN MAURICIO POVEDA ANGIE CAROLINA ROJAS SANDOVAL

> nancy_carvajal@yahoo.com - fabianmauricio.poveda@gmail.com angelan k@hotmail.com

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Abstract

Thinking is a human process which sometimes is unclear, superficial and illogical. Critical thinking plays an important role in creating social changes as it enables people to distinguish a fact from an opinion and interpret situations or texts taking into account: concepts, values, inferences, and previous knowledge, among other aspects. This article presents the results of a qualitative research project which was focused on critical thinking skills development and English language level improvement through the implementation of a didactic unit. It was conducted at an NGO with displaced children of elementary English language level. Constructs related to Critical Thinking and a synthetized data analysis will be presented.

Resumen

Pensar es un proceso humano que, en ocasiones, no es claro, es superficial e ilógico. El pensamiento crítico desempeña un papel importante en la generación de cambios social, ya que éste permite a las personas distinguir entre un hecho y una opinión, e interpretar situaciones o textos teniendo en cuenta conceptos, valores, inferencias y conocimientos previos, entre otros aspectos. Este artículo presenta los resultados de una investigación cualitativa que se centró en el desarrollo de habilidades del pensamiento crítico y el mejoramiento del nivel del idioma inglés a través de la implementación de una unidad didáctica. Este estudio se desarrolló en una ONG con niños desplazados quienes manejaban un nivel básico del idioma inglés. Algunos **Key words:** Critical thinking, inference, analysis, interpretation, skill, didactic unit.

constructos teóricos relacionados con pensamiento crítico y una breve síntesis del análisis de datos serán presentados.

Palabras claves: pensamiento crítico, inferencia, análisis, interpretación, habilidad, unidad didáctica.

Introduction

Some educational institutions at primary, elementary and higher education in Colombia tend to focus the development of teaching – learning practices of English skills like reading and/or writing unintentionally leave aside the development of cognitive skills like analysis and interpretation. We have observed this situation in the type of methods and activities used by Modern Languages practicum students at Universidad Pedagógica y Tecnológica de Colombia. Pre-service teachers often use repetition, drilling activities, and grammar exercises. This paper intends to show the relevance of developing critical thinking as a continuous process where a thinker begins to be aware of his/her thoughts and improves it by questioning his/her purposes, conclusions and others' points of view.

The Colombian Ministry of Education started to get schools immersed in the "National Program of Bilingualism" since 2004. It aimed at increasing communicative competence in the English language teachers and students at elementary, high school and university levels with the purpose of strengthening national competitiveness of professionals. Thus, teachers and students

have been going through training processes in which the main purpose is to develop a "mastery of the English language". But is the mastery of the language enough for facing the challenges of a globalized world?

It is important for children, teenagers and adults to be part of teaching practices that permit them to reinforce the development of cognitive skills and allow them to assume a critical stance in front of the realities they are immersed in. This is how the research group Knowledge in Action- K.I.A. - emerged as an academic community that is attempting to understand the field of Critical Thinking in order to support teachers' and students' critical thinking development. One of the principles of the research group states that being a critical thinker deals with taking action by using our knowledge and abilities to empower others. This is how the group started to support Juventas Foundation in the second semester of 2011. After visiting and spending time with these children in the program, we realized that this was an opportune moment to take some action and work with them.

Thus, we designed a didactic unit considering their curiosity, the need to enlarge the understanding of critical thinking and the desire to support Juventas' kids' cognitive and affective development.

Towards an understanding of critical thinking cognitive and linguistic skills

Critical thinking may display a myriad of definitions and perceptions. In this section the definition of critical thinking in terms of our research purposes will be presented. Likewise, critical thinking stages proposed by Paul & Elder (2007), cognitive domain with intellectual skills stated by Bloom (1956) and revised by Anderson & Krathwohl (2000) will be addressed. The linguistic skills concept presented by Cassany, Luna and Sanz (1994) and the structure and features of a didactic unit and visual didactic materials design theory proposed by Mac Linker (1971) will also be portrayed.

Schafersman (1991:3) states that critical thinking "means correct thinking in the pursuit of relevant and reliable knowledge about the world... it is reasonable, reflective, responsible, and skilful thinking that is focused on deciding what to believe or do". It means that critical thinking is an intellectual process that, in a determined, deliberate and self-regulated way, seeks to reach rational judgment. Critical thinking may also be conceived as an individual self-regulated practice that affects peoples' thinking practices and attitudes towards life. (Paul& Elder: 2007). This implies that critical thinking deals not only with the development of the cognitive dimension but also the affective one. Being empathic is one of the affective dimensions that allow individuals to put themselves in someone else's shoes and permits a person to understand diverse ways of thinking and behaving and develop values like respect and tolerance.

A person may go through different stages when developing critical thinking. Paul & Elder (2007) state "the unreflective thinker". is a stage when people are not conscious of the importance of thinking correctly in their lives. "The challenged thinker" begins to realize that the way they think affects all their lives aspects; "the beginning thinker" makes a sporadic effort to improve his/her thinking; and "the practicing thinker" begins to analyze most often his/her thought in order to solve problems. "The advanced thinker", deals with the constant control of the thought in more complex situations; finally, "the accomplished thinker" has become conscious and applies critical thinking to all situations in his/her life.

Apart from the stages a person may go through, the cognitive learning domain is the one that encloses lower and higher order thinking skills. Bloom (1956) proposed three learning domains or goals of the learning process: cognitive: mental kills (knowledge), affective: growth in feelings or emotional areas (attitude) and psychomotor: manual or physical skills (skills). The cognitive domain was the only one considered for the purposes of this study. According to Bloom (1956), the cognitive domain is divided into six levels, the first three levels (knowledge, comprehension, application) and correspond to the lower-order thinking skills and the last three levels (analysis, synthesis, and evaluation) are related to the higherorder or critical thinking skills.

Anderson &Krathwohl (2000) revised Bloom's taxonomy and changed the categories names by using verbs instead of nouns in order to provide the student a more active participation. They re-named the knowledge level by using *remembering*: and evaluation level was changed by: *creating*. In order to refer to every one of the levels, the new version will be presented by using verbs that describe the actions a critical thinker displays. These verbs were proposed by Anderson et al. (2001).

- Remembering: recognizing, recalling, identifying, retrieving.
- Understanding: interpreting,

- exemplifying, classifying, inferring, comparing, explaining
- Applying: executing, implementing, carrying out, using
- Analyzing: differentiating, organizing, attributing
- Evaluating: checking, coordinating, monitoring, critiquing, judging
- Creating: generating, hypothesizing, planning, producing, constructing

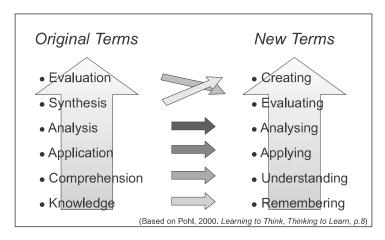


Figure 1. Revised Bloom's Taxonomy. Adapted from http://www.kurwongbss.qld.edu.au/thinkin/Bloom/blooms.htm

The levels of understanding and analysis were considered in the didactic unit designed. According to Antonio Mina, a didactic unit is a work unit equivalent to a complete and articulated teaching-learning process. It means that depending on learners, objectives, contents, and language level, a didactic unit becomes a helpful tool for teachers and students because it offers a detailed vision of

activities that are going to be developed in each lesson.

A didactic unit should comprise the following characteristics:

- Coherence: Parts of a didactic unit must be related.
- Flexibility: A didactic unit must allow some modifications in its development.

 Interdisciplinary: It must be related different areas around an experience core. Although, the contents must be connected to that core.

Regarding the linguistic skills, first of all, it is necessary to talk about two important aspects in the teaching-learning process of a foreign language: the linguistic and the cognitive competences. Chomsky claims the linguistic competence is a series of rules that may allow a speaker to understand diverse linguistic statements (as cited in Cassany, Luna &Sanz, 1994, p. 85). However, Hymes (1967) states, "communicative competence is the ability to use appropriately the language in several social situations" (as cited in Cassany et al., 1994, p. 85). Thus, although learning the grammar rules of a language is important, it is also necessary to know how to use that language in order to communicate and function in a society.

In this way, speaking, listening, reading and writing refer to the linguistic skills "a speaker of a language must dominate in order to be able to communicate efficiently" (Cassany et al., 1994, p. 88). But the main objective of teaching a language should be the achievement of correct communication and use of that language. Widdowsonstates that the linguistic skills should be "revised, integrated, made meaningful in the context"(1998). Therefore, teachers can plan exercises focused on a specific linguistic aspect, but relating it to the students' context, interests, and motivations in order to elicit the use of the language in communicative situations. In this way, classes development change and, as critical thinking proposes, students and teachers deal with communicative processes inside

and outside the classroom to observe and understand others realities.

Didactic Unit structure

The didactic unit applied in this study was designed based on the standards for foreign language proposed by Ministerio de Educación Nacional (MEN) and the abilities of understanding and analysis of the cognitive domain proposed by Bloom (1956) and revised by Anderson and Krathwohl (2000). The unit was designed according to Juventas' kids' needs considering their socio-cultural context. The didactic unit shows nine lessons focused on children's personal aspects. It promotes the development of the four learning skills (listening, reading, writing and speaking) and combines these with some critical thinking aspects such as observing, interpreting, analyzing.

Each lesson may be implemented in 2 or 6 class hours. and used the strategy of questioning, which was close related to images and texts to promote critical thinking and, at the same time, it combined Spanish-English readings and instructions to allow students English Language advancement.

Research design

Statement of the problem

Since the second semester of 2011, the research group **Knowledge in Action** has worked with some students from NGO Juventas. Throughout that time, it was observed that children enjoyed developing different types of activities in English but they only practiced some grammar aspects of the

language without taking into account cognitive skills meaning the students did not interpret, analyze or infer from information provided in a conscious way. Therefore, it was decided to develop an observation stage in order to analyze the reality evidenced in the classroom related to students' English language and their level of critical thinking. During that observation a reading about human values was carried out with the help of 10 children, between 10 and 16 years old, who were members of group B of Juventas Foundation and who were very quiet but active and participated orderly. After listening to the reading, a discussion was generated with the guidance of teachers (researchers). By means of this text, students shared their viewpoints, ideas, feelings and attitudes towards the lack of human values in our society. Although children participated actively, it was perceived that most children just focused on the literal message that the text provided. They limited their interventions to expressing their ideas without taking into account their experiences and backgrounds and they did not analyze in depth the text and did not infer relevant ideas that it portrayed.

In this way, the researchers observed that it was necessary to design a contextualized and meaningful material focused on Juventas' children's needs. Thus, the following main research question emerged:

How is the implementation of a didactic unit designed within the parameters of the

cognitive domain of critical thinking related to the development of reading and writing skills and some cognitive abilities in elementary-level students from Juventas Foundation?

Research approach and type

The approach of the current research project is qualitative since researchers studied intended "to penetrate to the deeper significance that the subject of the research ascribes to the topic being researched"1 (Denzin 1994). According to Cresswell qualitative research "is an inquiry process of understanding based on distinct methodological traditions of inquiry that explore a social or human problem. The researcher builds a complex, holistic picture, analyzes words, reports detailed views of informants, and conducted the study in a natural setting" (1994, p. 15). In this case, we attempted to analyze and understand the processes kids from Juventas went through when implementing the didactic unit. We observed and analyzed behaviors, attitudes, the English language and critical thinking development and ways of learning.

he type of research this study followed was action research. It "aim[ed] to contribute both to the practical concerns of people in an immediate problematic situation and to further the goals of social science simultaneously." (Gilmore, et al. 1986:161). Likewise, Kemmis&McTaggart (1988) state, action research is "participative,

http://www.mrcbsu.cam.ac.uk/cochrane/handbook500/chapter_20/20_2_1_definition_of_qualitative_research.htm

² Thomas Gilmore, Jim Krantz and Rafael Ramírez, "Action Based Modes of Inquiry and the Host-Researcher Relationship", Consultation 5.3 (Fall 1986): 161.

collaborative, is a systematic process of learning, realizes critical analysis of situations and starts with small cycles of planning, action, observation and reflection..."3 Thus, this study involved the active participation of researchers and members of Knowledge in Action- K.I.A. research group, the kids and some administrative staff from Juventas. Every one of the parties had an important participation in the different stages of the project. KIA's members and Juventa's staff commented on the unit designed, thestudents' participation during the implementation of the unit and researchers throughout the whole research process.

Participants

This research was carried out with the help of eight displaced children, five girls and three boys from Juventas Foundation. They are between 10 and 16 years old, they come from differend parts of Colombia like San José del Guaviare, Villavicencio and Antioquia and all of them had an elementary English levellt was decided to work with this group because it was possible to establish a schedule to carry out English classes and to implement the didactic unit. Now we are going to talk about the sample that this research took into account.

Sample

At the beginning of this study we worked with eight children, but during the research process we selected just four students (2 girls and 2 boys), as they attended

constantly to classes scheduledand showed a commitment and interest about the teaching-learning and reseach process.

Setting

"Didactic unit designed using critical thinking: A way to improve your skills" was conducted Juventas Foundation, a nongovernmental organization established in 2009, which seeks the integral development of children, victims of force displacement. It is located in Carrera 8 No. 19-23 - Centro Histórico in Tunja (Boyacá). This NGO has different programs including a school of football, and Juventas Language School, among others. This foundation has received American from volunteers, professionals from private and public institutions and K.I.A. which belongs to Languages School of UPTC. KIA has generated a volunteer movement in which many students of Foreign and Modern Languages programs have joined.

Data collection Instruments

Field notes, students' artifacts and semistructured interviews were used to collect, describe, analyze and evidence the work done and the development of students' cognitive and reading and writing skills.

Field notes

Field notes should be accurate, detailed, but these should not include irrelevant information. "Researchers should use descriptive words instead of interpretative

³ KEMMIS, S. & MCTAGGART, R. (1988). Cómo planificar la investigación-acción, Barcelona: Laertes.

words. Observer's insights and thoughts about what has been observed are important. These comments should be included in a separate, reflective part of the field notes..." In this case, notes were taken at the beginning of the implementation of this study and during and after every class taught at Juventas Foundation.

Artifacts

Goetz and LeCompte (1984) define artifacts of interest to researchers as things that people make and do. In this study artifacts refers to the texts and works produced by participants; "[they] provide[d] insight into the lives, experiences and perceptions of individuals, along with connections to real-world classroom context" (Ormrod: 2005).

Semi-structured interviews

This kind of interviews offers "the possibility to prepare some pre-set questions and allows more scope for open-ended answers." This instrument was used at the end of our research; it allowed us to confront and clarify data collected in the other two instruments.

DATA ANALYSIS

This part of our research describes the process we followed to analyze the gathered information in order to answer the research questions. Additionally, research findings are presented in two main categories that emerged from the current research project.

The main objective of this project was to analyze how the implementation of a didactic unit within the parameters of the cognitive domain of critical thinking may be related to the development of the linguistic and cognitive abilities in elementary-level students from Juventas Foundation.

Data collected was analyzed using grounded theory approach. Glaser and Strauss (1967: 2) claim grounded theory is "the discovery of theory from data systematically obtained from social research". To corroborate the outcomes of this research, we employed methodological triangulation. It refers to "the combination of two or more methods within the same research in order to strengthen the design and increase the ability to interpret the findings, so those can be corroborated or questioned by comparing the data produced by methods used." (Denzin: 1970; Kimchi, Polivka, & Stevenson: 1991). Therefore, we used three instruments in our research study: field notes, semi-structure interviews and students' artifacts.

We used the next codes in the data analysis: FN = Field Notes, SA = Students' Artifacts, SI = Student Interview, UL = Unit Lesson, ULQ = Unit Lesson Question and R = Researchers. We proposed the following codes: S1, S2, S3 and S4 to refer to the students who participated in this research. Two categories and four subcategories emerged from the data analysis we carried out.

Observation and field notes. Retrieved from http://hci.cs.siue.edu/NSF/Files/TeachingPD/How_CI_Observation%20and %20Field%20Notes.pdf

⁵ Interviews as critical connection tool. Retrieved from http://www.edu.plymouth.ac.uk

Chart #1: Categories and Subcategories That Emerged Throughout the Data Analysis.

MAIN QUESTION: How is the implementation of a didactic unit designed within the parameters of the cognitive domain of critical thinking related to the development of reading and writing skills and some cognitive abilities in elementary-level students from Juventas Foundation?

SUB-QUESTIONS	CATEGORIES	SUBCATEGORIES
How does the implementation of a didactic unit based on critical thinking may encourage the development	Understanding and Analysis: Important features in Critical Thinking	1.1 Questioning enhances interpretative, analytic and creative capacities immersed in a respectful environment.
of some critical thinking features in elementary-level students from Juventas?		
To what extent does the implementation of a didactic unit based on critical thinking may relate to the development of reading and writing skills of Juventas' elementary level students?	2. Developing cognitive skills and contextualizing material supports students' linguistic skills development.	2.1 Considering students' lives and experiences engages them in more participatory and meaningful learning environment. 2.2 Strategy of Spanish- English texts presentation fosters students' reading and writing skills

1. Understanding and Analysis: Important features in Critical Thinking

This category emerged from the analysis of lessons development, students' artifacts, field notes and semi-structured interviews. It shows that the strategy of questioning contributed to the improvement of two critical thinking skills of students: interpretation and analysis.

1.1Questioning enhances interpretative, analytic and creative capacities immersed in a respectful environment.

It was noticed that "questioning" used in the lessons designed motivated students to participate actively and respectfully. At the

same time, it allowed participants to understand topics discussed from a more reflective and interpretative way. Since critical thinking involves all aspects of human being's life, it was also perceived that students increased the practice of different values such as: respect, commitment, tolerance, gratitude, and sense of belonging. In this way, the environment perceived in the classes was respectful and solidary.

In every lesson, questioning was the strategy used to promote the development of critical thinking skills. Questions were designed taking into account students' context and appeared as a warming up activity in each lesson. In the following excerpt, there is an example of a starting question for a lesson:

(Excerpt No. 1. SA = Student Artifact April 24th, 2012) Researchers' analysis

ULQ: ¿Por qué saludo y me despido de las personas? S1: Porque me han enseñado que saludar es una norma básica de respeto a la sociedad y es una acción que nos hace quedar bien.

From the evidence above, we can see that S1 is explaining and supporting his answer by establishing connections with previous information and resort to family and school education background. This answer evidences a set of values that has started to take shape within the consciousness of the kid and evidences how his understanding of the topic takes place.

Questions proposed through the unit lessons pointed to stimulate students' thought, so they had the opportunity to ask and reflect about themselves. The next sample shows how the student provided a possible solution to contribute to take better care of nature. He is already hypothesizing, that is he is at the level of creating, which is a higher order thinking skill.

(Excerpt No. 2. SI = Student Interview September 4th, 2012) Researchers' analysis

3. ¿Qué solución plantearías para que las personas cambien su actitud frente a la contaminación del medio ambiente en tu colegio, en tu barrio y en tu ciudad?

S1: En mi barrio diría que, pues como le digo, que pusieran en un sitio el papel, si o no, o sea cómo le digo, mmm clasificar la basura, pues se podría vender el papel y pueseehh, la plata se utilizaría en el barrio, para algo pa´ la comunidad.

S1 analyses what the benefits would be for the community if certain behaviors and attitudes from the people were changed. It is important to highlight that the language used by the student denotes a sense of belonging that takes him to think in the welfare of the "community". This aspect evidences that S1 knows and has analyzed what the consequences of not manipulating garbage in a certain way has. This student is analytical and creative at the same time. It is important to take into account that a

critical thinker not only deals with the process of thinking for an individual benefit, but he/ she also treats thinking to be in harmony with nature and society.

According to Paul and Elder (1993:276-77), there are six different kinds of questions that foster critical thinking development: questions of clarification, questions that probe assumptions, questions that probe reasons and evidence, questions about viewpoints or perspectives, questions that probe

implications and consequences and questions about the question. In the previous excerpt, it is evident that the use of questions about viewpoints or perspectives in which the student proposed an alternative perspective to solve the contamination problem and how people in his/her neighborhood should respond about it.

2. Developing cognitive skills and contextualizing material supports students' linguistic skills development.

This category illustrates that contextualizing texts, selecting relevant images and asking questions was a starting point to bring the lives and realities of the kids into the classroom. More meaningful learning experiences were held and a linguistic improvement was evident. Likewise, the motivation of students increased.

2.1 Considering students' lives and experiences engages them in more participatory and meaningful learning environment.

The current subcategory evidences that the design of contextualized didactic materials is a great aid to facilitate students' understanding of topics. When teacher takes into account students' needs and realities, he/she has the opportunity to provoke a change in students' attitudes and their way of thinking about English learning and education in general. At the beginning of each lesson students found introductory contextualized readings in a clear and simple language. The next example is a part of one of those readings.

(Excerpt No. 7. UL = Unit Lesson #3 May 8th, 2012) Researchers' analysis

• ¿ Te imaginas la vida sin números? Lee el siguiente texto y comparte lo que piensas con tus compañeros:

What are numbers? What are they useful for? A way to understand their importance is to imagine a life WITHOUT numbers. How much could you pay for the bus? What time could you go to school?

The numbers are a LANGUAGE that allows us to represent the world. They are everywhere. We can relate the numbers with all that exist. We can count objects, the pulsations of our heart. We can measure objects and compare them with others for their measures and their weight. They are present in addresses and coordinated and of course when we buy and we sell we use the numbers.

The next excerpt demonstrates how the last one enhanced students' understanding and participation:

(Excerpt No. 8. FN = Field Note May 8th, 2012) Researchers' analysis

Teacher asks students to list what activities they used to do in which they employ numbers, in order for them to analyze the importance of numbers in the daily life.

All students participate and say:

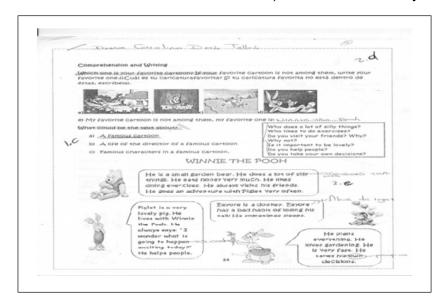
"comprar, en la clase de matemáticas, horas, medimos objetos, cuando cocinamos, celebrar fechas especiales".

This sample shows that the didactic unit design was done focusing on children of Juventas Foundation, taking into account their social context which enabled students to participate in a higher level and to improve the learning environment inside the classroom through the development of different lessons, didactic material encompassed readings, images, questions, grammar exercises, among others.

2.2 Strategy of Spanish-English texts presentation fosters students' reading and writing skills.

This category describes what we observed in terms of Spanish-English texts presentation. The objective with the texts was to provide an initial linguistic support in order for students to make comparisons between the two languages and decode the meaning of a sentence. In the very beginning of the research development, they felt uncomfortable to participate reading the texts but during the progress of the classes they began to take risks and improve their confidence.

(Excerpt No. 9. SA = Student Artifact June 5th, 2012) Researchers' analysis



In each one of the classes one student began reading the text provided in Spanish and the rest followed it in English, then, they identified unknown vocabulary and tried to understand their meaning by analyzing the text as a whole. By the end of the implementation of the didactic unit, students increased their vocabulary and read and understood texts in English.

Conclusions

When teachers design contextualized didactic material by considering a critical perspective, they may increase students' motivation, and create a more participatory learning environment. Furthermore, students will show progress in two dimensions cognitive and affective. In relation to the cognitive domain, students may develop understanding of topics in an easier way, may become analytical by exemplifying, categorizing and comparing information.

Enhancing activities that use both languages, native and foreign, allows students to feel more comfortable and secure in order for them to improve their knowledge of the foreign language and to strengthen their thinking processes. Keeping in mind that experiences shape a person, children analyzed according to what they have lived. So they began to connect their backgrounds to new learning.

Questioning was one of the most effective strategies that contributed to develop Critical Thinking of Children from Juventas Foundation, as they had to analyze, interpret, understand different topics that were close related to their lives.

Pedagogical implications

The development of this research project based on the implementation of a didactic unit founded on critical thinking principles offers teachers an alternative to improve, students' critical cognitive skills and English level. This research study allowed the participants to come in contact with didactic material related to their reality which providedthem meaningful and comfortable environments to learn English.

This research project offers the K.I.A. research group and other researchers the possibility to continue exploring ways of designing contextualized material under the scope of critical thinking.

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THE AUTHORS

Nancy Emilce Carvajal holds a B.A. in Modern Languages English-Spanish at UPTC. M.A. in Language Teaching at UPTC. Fulbright PhD scholar 2013. PhD focuses on Cultural Studies and Social Thought in Education, Washington State University. Founder and coordinator Knowledge in Action-K.I.A. - research group (October 2010- July 2013). Research interests: critical thinking, cultural studies, social justice.

Fabian Mauricio Poveda holds a B.A. in Modern Languages English-Spanish at UPTC. He experienced teaching Spanish in China. He is an English teacher at Presentación School in Duitama. He belonged and actively participated in the research group Knowledge in Action -K.I.A- In 2012 he was a presenter in 47th ASOCOP Annual Conference.

ANGIE CAROLINA ROJAS SANDOVAL B.A. in Modern Languages English- Spanish at UPTC. She belonged and actively participated in the research group Knowledge in Action -K.I.A- In 2012 he was a presenter in 47th ASOCOPI Annual Conference.